CLAIMS:

1. A dilatation balloon for use in combination with a catheter device, said balloon having a waist, cone and body portions, said balloon formed of a first polymeric composition, said balloon having a second layer formed on at least a portion of said balloon, said second layer comprising a second polymeric composition which is crosslinked to form a compression region on at least a portion of said balloon.

2. The dilatation balloon of claim 1 wherein said second polymeric composition is crosslinked on at least a portion of said waist, said cone or both.

3. The dilatation balloon of claim 1 wherein said second polymeric composition is crosslinked on said waist portions.

4. The dilatation balloon of claim 1 wherein said second polymeric composition is crosslinked on said cone portions.

5. The dilatation balloon of claim 1 further comprising a tie layer between said first layer and said second layer.

6. The dilatation balloon of claim 1 wherein said first polymeric composition comprises at least one member selected from the group consisting of polyolefins, polyesters, polyethers, polyamides, polyketones, polyvinyl chlorides, polyphenylene sulfides, polyurethanes, copolymers thereof and mixtures thereof.

7. The dilatation balloon of claim 1 wherein said first layer comprises at least one member selected from the group consisting of polyether block amides, polyethylene terephthalate, polybutylene terephthalate, polyester-polyether block copolymers, and mixtures thereof.

8. The dilatation balloon of claim 1 said second polymeric composition comprising at least one member selected from the group of polyolefins.

9. The dilatation balloon of claim 1 wherein said first polymeric composition comprises a polyether block amide and said second composition comprises polyethylene.

10. The dilatation balloon of claim 6 further having a tie layer, said tie layer comprising polyethylene modified with at least one member selected from the group consisting of maleic anhydride, epoxies, oxazolines, carbodiimides, isocyanates, and mixtures thereof.

11. The dilatation balloon of claim 3 wherein said balloon is further secured to a catheter at said waist portion of said balloon.

12. The dilatation balloon of claim 11 wherein said second layer is removed after said balloon is secured to said catheter shaft.

13. The dilatation balloon of claim 11 further comprising a tie layer between said balloon and said catheter shaft.

14. The dilatation balloon of claim 13 wherein said tie layer further comprises a crosslinking inhibitor.

15. The dilatation balloon of claim 14 wherein said crosslinking inhibitor is a free radical scavenger.

16. The dilatation balloon of claim 13 wherein said tie layer is formed from a polymeric composition having a lower melting temperature than said first polymeric composition.

17. A dilatation balloon having a waist, cones and body portion, said dilatation balloon formed from a first polymeric composition, said dilatation balloon further comprising a second layer on said cone portion of said balloon formed from a second composition which is crosslinked.

18. A method of making a tubular parison for use in a catheter assembly, said method comprising the steps of:

a) forming a tubular parison from a first polymeric composition;

b) forming a second layer which is disposed on said tubular parison, said second layer comprising a second polymeric composition; and

c) initiating crosslinking of said second polymeric composition such that said second polymeric composition forms compressive regions on said tubular parison.

19. The method of claim 18 wherein said tubular parison is formed by extrusion.

20. The method of claim 18 wherein said second layer is formed on said tubular parison by intermittent coextrusion of said second layer with continuous extrusion of said tubular parison.

21. The method of claim 18 wherein said second layer is formed by coextrusion with said tubular parison and crosslinking is selective.

22. The method of claim 18 wherein said crosslinking is initiated by an energy source, by a chemical agent, or both.

23. The method of claim 18 wherein said crosslinking of said second polymeric composition is initiated by application of an energy source.

24. The method of claim 23 wherein said energy source is electron beam or ultraviolet.

25. The method of claim 18 wherein said tubular parison is further formed into a dilatation balloon by blow molding, said dilatation balloon having cone, waist and body portions.

26. The method of claim 25 wherein said second polymeric composition is crosslinked on said at least one of said waist portions, said cone portions, or both.

27. The method of claim 18 wherein said tubular parison further comprises a tie layer between said tubular parison and said second layer.

28. The method of claim 18 wherein said tie layer is applied by intermittent coextrusion of said tie layer and said second layer is simultaneously applied by intermittent coextrusion with said tie layer and said tubular parison is formed by continuous extrusion.

29. The method of claim 28 wherein said second polymeric composition is crosslinked on said at least one waist portion of said balloon.

30. The method of claim 29 further comprising the steps of disposing said balloon about a distal end of a catheter shaft

31. The method of claim 30 further comprising the step of securing said balloon to said distal end of said catheter shaft at said at least one waist portion of said balloon.

32. The method of claim 31 further comprising the step of removing said second polymer composition after securing said balloon to said distal end of said catheter shaft.

33. The method of claim 32 further comprising the step of disposing a tie layer between said at least one waist portion of said balloon and said distal end of said catheter shaft.

34. The method of claim 33 wherein said tie layer is formed from a lower melting temperature composition than said balloon.

35. The method of claim 34 further comprising the step of removing said crosslinked layer by heating said tie layer.

36. The method of claim 33 wherein said tie layer further comprises a crosslinking inhibitor.

37. The method of claim 36 further comprising the step of removing said crosslinked layer by heating said tie layer.

38. The method of claim 36 wherein said crosslinking inhibitor is a free radical scavenger.

39. The method of claim 36 wherein said tie layer is formed from the same or a substantially similar polymeric composition as said second polymeric composition.

40. The method of claim 27 wherein said tie layer is a polyethylene modified with at least one member selected from the group consisting of maleic anhydride, epoxies, oxazolines, carbodiimides, isocyanates, and mixtures thereof.

41. The method of claim 25 wherein said crosslinking step is prior to said blow molding step.

42. The method of claim 31 wherein said securing step is welding.

43. The method of claim 32 wherein said removing step is done by skiving or through the use of a laser.

44. A method of producing an integral heat shrink layer in dilatation balloons, the method comprising the steps of:

a) extruding a first layer of a first polymeric composition, said first layer defining a tubular parison;

b) coextruding a second layer comprising a crosslinkable polymeric composition over at least a portion of said first layer; and

c) initiating crosslinking of at least a portion of said second layer; and

d) forming said dilatation balloon having waist, cone and body portions; wherein said second layer provides a compressive force on said first layer in said portions of said second layer which are crosslinked.

45. The method of claim 44 wherein said crosslinking of said second layer is at least on said waist portion of said dilatation balloon.

46. The method of claim 45 wherein said dilatation balloon is disposed on a catheter shaft and welded to a catheter shaft through laser welding at said waist portion of said dilatation balloon.

47. The method of claim 46 wherein said heat shrink layer is removed from said dilatation balloon after welding.

48. The method of claim 47 wherein said heat shrink layer is removed by skiving or through the use of a laser.

49. The method of claim 47, said dilatation balloon further comprising a tie layer between said heat shrink layer and said dilatation balloon.

50. The method of claim 49, said tie layer further comprising a crosslinking inhibitor.

51. The method of claim 50 wherein said crosslinking inhibitor is a free radical scavenger.

52. A method of applying a compressive force to a joint between two components of a medical device comprising the steps of:

a) providing a first tubular member formed from a first polymeric composition, said first tubular member having an inner layer and an outer layer;

b) providing a second tubular member formed from a second polymeric composition which is the same as or different than said first polymeric composition, said second tubular member having an outer layer and an inner layer and having disposed on at least a portion of the outer layer of the second tubular is an crosslinkable layer formed from a third composition;

c) initiating crosslinking of said crosslinkable layer;

d) expanding said second tubular member; and

e) joining said first tubular member and said second tubular member such that at least portion of the outer layer of the first tubular member contacts at least a portion of the inner layer of the second tubular member and the crosslinkable layer of the second component is disposed on said outer layer of said second tubular member at the point of contact of said first tubular member and said second tubular member;

53. The method of Claim 52 wherein said expanding step is accomplished during blow molding said second tubular member into a dilatation balloon.

54. A method of providing a dilatation balloon for a catheter assembly with improved trackability, cross and recross, and better collapsibility after use, the method comprising the steps of:

a) forming a tubular parison;

b) applying a second crosslinkable composition to said tubular parison at predetermined locations;

c) inducing crosslinking in said second crosslinkable composition such that a crosslinked layer is formed on said tubular parison;

d) processing said tubular parison into a dilatation balloon having cone, waist and body portions;

wherein said second crosslinkable composition is applied in predetermined locations such that when said tubular parison is processed into said dilatation balloon, said crosslinked layer is at least on said cone portions of said dilatation balloon.

55. The method of claim 54 wherein said crosslinkable composition is applied over the entirety of said tubular parison, and is selectively crosslinked at predetermined locations.